APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/385,394	08/30/1999	JOHN S. YATES JR.	114596/03-4000.	9093

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EXAMINER
ELLIS, RICHARD L

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 10/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>15 July 2004</u>.

2a)☒ This action is **FINAL**.　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60,63-116 and 119-133* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-21, 37-50, 113-116 and 119-133* is/are allowed.

6)☒ Claim(s) *22-33,51-59,63-66,68-85 and 87-112* is/are rejected.

7)☒ Claim(s) *34-36,60,67 and 86* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>20040715</u>. ●

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____ .

1.   Claims 1-60, 63-116, 119-133 remain for examination.

2.   The text of those sections of Title 35, US Code not included in this action can be found in a prior Office Action.

3.   Applicant's amendment submitted July 15, 2004 fails to properly comply with the requirements of 37 CFR 1.121 which became effective July 30, 2003, nearly a full year prior to applicant's submission. All amendments submitted after July 30, 2003 **"must include a complete listing** of all claims in the application" (see attached office flyer). Applicant's amendment of July 15, 2004 fails to include a "complete listing of all claims", specifically, it fails to include a listing of canceled claims 61-62 and 117-118. Additionally, 37 CFR 1.121 also requires that "after each claim number in the listing, the status must be indicated in a parenthetical expression ...". Because applicant's submission fails to include a listing of claims 61-62 and 117-118, it also fails to indicate the status of those claims in a parenthetical expression. Applicant is advised to carefully review the attached office flyer as well as the associated documents referenced at the URL included in the flyer for further information about the correct formatting of amendment documents.

4.   The references listed on applicant's information disclosure statement ("IDS") submitted July 15, 2004 have been considered in part. Specifically, all stricken through references have not been considered because applicant's IDS fails to fully comply with the requirements of 37 CFR § 1.98(a)-(d). It fails to comply with section (a) in that legible copies of the stricken through references have not been provided by applicant. It further fails to comply with section (d) because it fails to properly identify prior applications that are relied upon for a filing date which contain a valid IDS complying with sections (a)-(c) citing the referenced documents.

5.   Additionally, applicant's response failed to address in any manner the following requirements from the last office action, said requirements being maintained in this office action:

6.   The computer program listing filed on [1] as a "microfiche appendix" is unacceptable. A computer program listing conforming to the requirements of 37 CFR 1.96 is required.

The microfiche appendix is unacceptable because it is not limited to containing only a computer program listing. There appear to be at least six tables, and two graphical flowcharts contained within the frames of the appendix. Both of which are not a computer program listing as defined by MPEP 608.05(a). Applicant is reminded that in resubmitting the appendix in proper format, he must adhere to the new 37 CFR 1.96 rules regarding submission of a computer program listing because as of February 28, 2001, the office no longer accepts microfiche.

7.   The attempt to incorporate subject matter into this application by reference to US Patent applications 09/322,443, 09/298,536, and 09/239,194 is improper because those applications themselves incorporate by reference additional subject matter. See MPEP 608.01(p)(A).

8.   The attempt to incorporate subject matter into this application by reference to a list of publications on pg. 143 is improper because applicant may not incorporate essential material by reference to a document which is not a US patent or US patent publication.

9.   Claims 94-95 are rejected under 35 USC 102(b) as being clearly anticipated by Brender et al., U.S. Patent 5,339,422.

10.   Claims 51-53, 63-66, 68, 70-72, and 104-109 are rejected under 35 USC 102(e) as being clearly anticipated by Goetz et al., U.S. Patent 5,854,913.

11.   Claims 22-33, 54-59, 69, 73-85, 87-93, 96-103, and 110-112 are rejected under 35 USC § 103 as being unpatentable over Goetz et al., U.S. patent 5,854,913, in view of Brender et al., U.S. Patent 5,339,422 and Murphy et al., U.S. Patent 5,764,947.

Goetz et al., Brender et al., and Murphy et al. were cited as a prior art references in paper number 38, mailed February 11, 2004.

12.   The rejections are respectfully maintained and incorporated by reference as set forth in the last office action, paper number 38, mailed February 11, 2004.

13.   Applicant's arguments filed July 15, 2004, paper number 20040715, have been fully considered but they are not deemed to be persuasive.

14.   In the remarks, applicant argues in substance:

14.1.   That: "Paragraph 52.4 compares the "the indicator elements each having a value indicating the data storage convention under which instructions from the associated region are to be executed" to Goetz, col. 17, lines 24-33. However, here, Goetz only teaches a P bit that indicates an <u>instruction set</u>. There is no indication that Goetz ever uses two different "data storage conventions" as recited in claim 22, let alone indicates them with any "indicator."

This is not found persuasive because applicant is arguing against the references

separately. One cannot show nonobviousness by attacking references individually where the

rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

1986).

14.2.   That: "Claim 51 recites that the pages' indicator elements are stored in a table whose entries are indexed by <u>physical</u> page frame number. In contrast, the Office Action points to a table whose entries are indexed based on the <u>virtual</u> page number (Goetz '913, col. 10, line 8). The "real address" discussed in line 21 is the "address of the page table" as a whole, not a "physical page frame number" used as an "index" to an "entry" as recited in claim 51."

This is not found persuasive because as seen from fig. 4 and col. 10 lines 4-28 of Goetz

et al. the value in register 50 is a real address (note the label associated with register 50 on fig.

4) which addresses ("As a verb, to reference a storage location [see attached *Microsoft Press*

Computer Dictionary, pg. 208]) a page table (51) to index ("a scalar value that allows direct

access into a multielement data structure such as an array" [see attached *Microsoft Press*

Computer Dictionary, pg. 208]) and access a particular element (one of PTEG0 ... PTEGn) of

a multielement data structure (page table 51, containing elements PTEG0 ... PTEGn).

Accordingly, register 50 is a physical page number index.

14.3.   That: "The Office Action points to col. 14, lines 19-22 and 54-62, as showing that the "indicator elements" of the claim [claim 63] are "stored in a table distinct from a primary address translation table. ... Applicant notes that Goetz stores his P bits "in each PowerPC page table entry" (col. 17, lines 29-30). Thus Goetz does not meet the limitation that the indicator elements be "stored in a table distinct from a primary address translation table".

This is not found persuasive because as seen from col. 14, lines 19-22, there is a page

table stored in external memory, which applicant quite correctly identifies as storing Goetz et

al.'s P bits. However, applicant's arguments ignore the citation to Goetz et al. col. 17 lines

13-16 where it is seen that the "primary address translation table" utilized by the CPU is the

TLB integrated directly upon the CPU itself. Therefore, Goetz et al. has indicator bits (P bits)

stored in a table (page table in main memory) which is distinct from the primary address table

(the TLB). Accordingly, Goetz et al. meets the claim language applicant's have chosen to use

to claim their invention.

14.4.   That: "Claim 87 recites "executing a control-transfer instruction ... architecturally
        defined to transfer control directly to a destination instruction". ... Further, Brender
        '422 teaches that the control transfer instruction must transfer control to the jacket, not
        "directly to a destination instruction" as recited in claim 87".

This is not found persuasive because Brender et al. does indeed indicate that the

control-transfer instruction is "architecturally defined to transfer control directly". See col. 15

lines 48-50: "In the present embodiment, it is based on the fact that a **direct X call to a Y**

routine incurs an X operand fault". Accordingly, Brender et al. indicates that the call is

"architecturally defined" to transfer "directly". Brender et al.'s system simply intervenes to

convert between the expected data storage conventions of the two routines.

14.5.   That: "To paraphrase claim 94, a control transfer may transfer to two different
        destinations, coded in two distinct instruction sets, without modification of the code
        between the two executions. ... At col. 10, lines 29-40, Brender '422 further
        distinguishes itself from claim 94, by noting that he provides a customized "jacket" for
        each and every source/destination pair. Brender's jacket only works for that single
        transition".

This is not found persuasive because applicant's citation to Brender et al. does not at all

support his assertion that Brender et al. creates a custom jacket for each and every

source/destination pair. The cited text states that to achieve the patented X-Y compatibility,

the state of the Y machine must be made such that it appears the call occurred from Y code,

and then upon return the state of the X machine must be made to appear as if the call had been

executed by X code. This does not in any way state that there is a separate custom jacket for

every source/destination pair.

14.6.   That: "[as to claim 96] Brender '422 and Murphy '947 are entirely software based ...
        Goetz '913 does not discuss differences in data storage convention ... No combination
        of these three references could meet claim 96.

This is not found persuasive because applicant is arguing against the references

separately. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Additionally, as to applicant's argument regarding the perceived fact that Brender and Murphy are entirely software based, it is submitted that it has been notoriously well known for at least twenty years in the computer arts that software and hardware are logically equivalent and interchangeable. See pg. 11-12 of *Structured Computer Organization* by Andrew S. Tanenbaum, published in 1984.

14.7. That: "Claim 104 recites two memory regions that "[follow] first and second data storage conventions." As discussed above in connection with claim 22, at page 34, there is no indication that Goetz '913 uses two different "data storage conventions."

This is not found persuasive because applicant is arguing against the references separately. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

15.   Claims 1-21, 37-50, 113-116, and 119-133 are allowable over the prior art of record.

16.   Claims 34-36, 60, 67, and 86 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17.   **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR § 1.136(a). The practice of automatically extending the shortened statutory period an additional month upon the filing of a timely first response to a final rejection has been discontinued by the Office. See 1021 TMOG 35.

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE

PURSUANT TO 37 CFR § 1.136(a) WILL BE CALCULATED FROM THE MAILING
DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD
FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS
FINAL ACTION.

18.   Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Richard Ellis whose telephone number is (571) 272-4165. The Examiner can normally be reached on Monday through Thursday from 7am to 5pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Eddie Chan, can be reached on (571) 272-4162. The fax phone number for the USPTO is: (703)872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC central telephone number which is (571) 272-2100.

Richard Ellis
October 21, 2004

RICHARD L. ELLIS
PRIMARY EXAMINER

Extrinsic evidence provided in support of statements made in response to applicant's arguments.